

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**C. Amendments to the Claims.**

**1. (Withdrawn) A semiconductor device, comprising:**

a semiconductor substrate;

an isolation film buried in the substrate;

5 a gate insulating film formed between the isolation film and having end

portions adjacent to the isolation film that are thicker than a central portion.

**2. (Withdrawn) The semiconductor device according to claim 1, further including:**

10 a trench in the semiconductor substrate between adjacent gate insulating films and having a width essentially the same as the distance between the adjacent insulating films; and

the isolation film is buried in the trench.

**3. (Withdrawn) The semiconductor device according to claim 1, further including:**

15 a first electrode formed on the gate insulating film;

a capacitance insulating film formed on the first electrode; and

a second electrode formed on the capacitance insulating film.

**4. (Withdrawn) The semiconductor device according to claim 1, wherein:**

an upper surface of the isolation film is at substantially the same height as

20 an upper surface of the end portion of the gate insulating film.

**5. (Withdrawn) The semiconductor device according to claim 1, wherein:**

an upper surface of the isolation film is higher than an upper surface of the end portion of the gate insulating film.

**25 6. (Withdrawn) The semiconductor device according to claim 1, further including:**

a first electrode formed on the gate insulating film and having a recessed portion at a central first electrode portion between the isolation film.

**7. (Withdrawn) The semiconductor device according to claim 1, wherein:**

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the semiconductor device is a flash memory.

8. (Previously Amended) A manufacturing method of a semiconductor device, comprising the steps of:

- 5 forming a first oxide film on a surface of a semiconductor substrate;
- depositing a stacked film including a first conductive layer in contact with the first oxide film;
- etching the stacked film and the first oxide film to form a plurality of stacked film patterns arranged on the semiconductor substrate;
- 10 oxidizing the semiconductor substrate to form a second oxide film on a surface of the semiconductor substrate sandwiched between adjacent said stacked film patterns and a surface of the semiconductor substrate below end portions of the stacked film patterns wherein the second oxide film has a film thickness thicker than the first oxide film;
- 15 forming a side wall mask film on a side of the stacked film patterns to form mask patterns including the stacked film patterns;
- removing the portion of the second oxide film sandwiched between the mask patterns and a portion of the underlying semiconductor substrate using the mask patterns as a mask to form a trench in the semiconductor substrate; and
- 20 filling the trench with an insulating film  
wherein the stacked film includes a stopper film that provides a stopper for a chemical mechanical polishing step.

9. (Original) The manufacturing method of a semiconductor device according to claim 8,  
25 wherein:

the step of filling the trench with an insulating film includes forming the insulating film to have a top surface having a height that essentially matches with a height of the second oxide film.

10. (Original) The manufacturing method of a semiconductor device according to claim 8, further  
30 including the steps of:

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forming a capacitance insulating film on the surface including the first conductive layer after the step of filling the trench with an insulating film; and  
forming an electrode on the capacitance insulating film.

11. (Original) The manufacturing method of a semiconductor device according to claim 8,  
5 wherein:

the side wall mask film includes a nitride film.

12. (Original) The manufacturing method of a semiconductor device according to claim 8,  
wherein:

10 the second oxide film is approximately 20 to 50 nm thicker than the first oxide  
film.

13. (Cancelled) The manufacturing method of a semiconductor device according to claim 8,  
wherein:

15 the stacked film includes a stopper film that provides a stopper for a  
chemical mechanical polishing step.

14. (Currently Amended) A manufacturing method of a semiconductor device, comprising the  
steps of:

20 forming a first oxide film on a surface of a semiconductor substrate;

depositing a stacked film different from the first oxide film and  
including a first layer on the first oxide film;

etching the stacked film and the first oxide film to form a plurality of  
stacked film patterns arranged on the semiconductor substrate;

25 oxidizing the semiconductor substrate to form a second oxide film on a  
surface of the semiconductor substrate sandwiched between adjacent stacked film  
patterns and a surface of the semiconductor substrate below end portions of the  
stacked film patterns wherein the second oxide film has a film thickness thicker  
than the first oxide film;

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removing the portion of the second oxide film sandwiched between the stacked film patterns and a portion of the underlying semiconductor substrate using the stacked film patterns as a mask to form a trench in the semiconductor substrate; and

5 filling the trench with an insulating film.

**15. (Currently Amended)** The manufacturing method of a semiconductor device according to claim 14, wherein:

the step of filling the trench with an insulating film includes forming the insulating film to have a top surface coplanar having a height that essentially matches with a height of the top surface of the first layer.

**16. (Currently Amended)** The manufacturing method of a semiconductor device according to claim 14, further including the steps of:

removing the stacked film patterns so that at least the second oxide film below the stacked film patterns remain;

15 subsequently forming a gate oxide film in a region between portions of the second oxide film;

forming a first electrode over the gate oxide film and at least a portion of the second oxide film.

20 **17. (Original)** The manufacturing method of a semiconductor device according to claim 16, wherein:

the first electrode includes end portions next to the insulating film that are higher than a central portion of the first electrode.

25 **18. (Currently Amended)** The manufacturing method of a semiconductor device according to claim 16, wherein:

the insulating film has a top surface substantially even with a top surface of the first electrode.

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**19.** (Original) The manufacturing method of a semiconductor device according to claim 16, further including the steps of:

forming a capacitance insulating film on the first electrode; and  
forming a second electrode on the capacitance insulating film.

5      **20.** (Original) The manufacturing method of a semiconductor device according to claim 16, wherein:

the first electrode includes polysilicon.

10     **21.** (Previously Added) The manufacturing method of a semiconductor device according to claim 8, wherein:

the first conductive layer of the stacked film is a transistor gate electrode layer.